

# Mineral Industry Surveys

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## SULFUR IN MAY 1999

During the month, production of combined Frasch and recovered elemental sulfur was 791,000 metric tons, according to the U.S. Geological Survey. May production was 6% lower than that of April 1999 and 3% lower than May 1998. Shipments of these combined products were 45% lower than those of April 1999. Ending stocks for May 1999 were 197,000 tons.

Production problems at Freeport Sulphur Inc.'s Main Pass Frasch Mine are easing. As shown in table 1, production reported for natural gas operations, including Frasch production, has been increasing steadily since September 1998, when hurricanes in the Gulf of Mexico forced Freeport to evacuate its offshore platform twice. Since that time, Freeport has been working to solve technical problems caused by the storms that resulted in severely reduced production at Main Pass. In order to maintain as much production as possible, the company chose to continue to operate its Culberson Mine, although it had been slated for closure before the end of 1998. Because production at Main Pass is approaching desired levels, new drilling has been suspended at Culberson, and production is expected to cease by the middle of 1999 (Green Markets, 1999a).

Because of Freeport's difficulties at Main Pass, the company drew down their stocks to the point that the company was no longer able to meet its supply contracts without acquiring additional material from outside sources. For that reason, in addition to the typical data detailing imports of elemental sulfur from Canada and Mexico shown in table 2, total import data includes shipments from Venezuela and Saudi Arabia. Imports of molten elemental sulfur from Venezuela have become common as a result of long-term supply agreements between U.S. phosphate fertilizer producers and Venezuelan sulfur producers.

U.S. imports of sulfur from Saudi Arabia, however, are a

surprising—and probably short-term—development. Freeport has been buying formed sulfur from the U.S. Virgin Islands and bringing it to Galveston, TX, where it is remelted and then shipped to customers. The Saudi material is intended to rebuild Freeport's stocks (Green Markets, 1999b). Because it appears that Freeport will be producing at the desired rate soon, these unusual purchases are not expected to be necessary much longer.

Import and export data for May 1999 were not available at the time of publication and will be published in the Sulfur in June 1999 Mineral Industry Surveys along with apparent consumption. Imports of recovered sulfur for April 1999 were 183,000 tons; exports were 113,000 tons. Imports of sulfuric acid for April 1999 were 97,000 tons; exports were 13,000 tons.

Significant adjustments have been made to the sulfur import data. Reports from the Bureau of the Census appear to underreport sulfur imports, especially for material from Canada. The revised figures are based on Census information, data collected and published by the Alberta (Canada) Energy and Utilities Board (EUB) in its monthly production report, and information from other published sources. The EUB report is particularly valuable because the majority of Canadian sulfur is produced in that province, and most of the Canadian sulfur that enters the United States comes from Alberta. When the data problems are solved, USGS will resume using Census data exclusively.

## References Cited

- Green Markets, 1999a, MMR reports \$1.33 million in net income; \$51 million in sulfur revenue: Green Markets, v.23, no.17, April 26, p. 8.  
———1999b, Sulfur market watch: Green Markets, v. 23, no. 4, January 25, p. 7.

TABLE 1  
SALIENT SULFUR STATISTICS 1/

(Thousand metric tons)

Period	Production				Shipments, all sources
	Frasch	Petroleum 2/	Natural gas 3/	Total 3/	
1998:	W	5,690	3,970	9,670	10,100
January-May	W	2,260 r/	1,800 r/	4,060 r/	4,270 r/
May	W	469	348	817	884
June	W	463	388	851	894
July	W	493	342	835	888
August	W	503	313	816	842
September	W	458	246	704	741
October	W	461	286	747	815
November	W	494	291	785	767
December	W	556	310	866	906
1999:					
January	W	498	315	813	810
February	W	457	319	776	760
March	W	510	342 r/	852 r/	807 r/
April	W	508 r/	332	840 r/	826 r/
May	W	483 p/	307 p/	791 p/	796 p/
January-May	W	2,460 p/	1,620 p/	4,070 p/	4,000 p/

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Natural gas."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes a small quantity from coking operations.

3/ Includes data from Frasch producer.

TABLE 2  
U.S. IMPORTS OF SULFUR 1/

(Thousand metric tons and thousand dollars)

Period	Canada		Mexico		Total, all countries 2/	
	Quantity 3/	Value 3/	Quantity	Value 3/	Quantity 3/	Value 3/
1998:	1,440	16,900	559	26,900	2,270	58,400
January-April	480 r/	8,000	222	10,300	811 r/	25,800 r/
April	116	2,230	63	2,870	213	7,320
May	117	2,470	21	963	157	4,300
June	117	1,730	53	2,910	199	5,360
July	117	622	42	1,950	167	3,030
August	107	611	38	1,790	182	4,290
September	104	767	59	2,840	182	4,540
October	122	934	41	1,910	181	3,700
November	139	774	41	2,020	199	3,550
December	141	958	42	2,220	193	3,830
1999:						
January	136	953	55	2,760	209	4,470
February	130	968	37	1,990	267	6,070
March	130 p/	1,570	40	2,160	194 p/	4,620
April	130 p/	1,470	39	2,100	183 p/	4,130
January-April	526 p/	4,960	171	9,010	853 p/	19,300

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include other countries not listed.

3/ Declared customs valuation.

Source: Bureau of the Census; as adjusted by U.S. Geological Survey.

TABLE 3  
U.S. IMPORTS OF SULFURIC ACID 1/

(Thousand metric tons and thousand dollars)

Period	Canada			Europe			Total, all countries 2/		
	Quantity	Sulfur content	Value 3/	Quantity	Sulfur content	Value 3/	Quantity	Sulfur content	Value 3/
1998:	1,550	508	47,800	47	15	400	2,040	667	58,600
January-April	572	187	16,500	21	6	148	758	247	20,800
April	158	52	4,300	--	--	--	206	67	5,550
May	148	48	3,960	(4/)	(4/)	9	205	67	4,720
June	118	39	7,110	(4/)	(4/)	15	142	47	7,860
July	121	40	2,970	(4/)	(4/)	20	170	56	4,070
August	126	41	3,670	10	3	39	159	52	4,620
September	100	32	2,830	(4/)	(4/)	22	119	39	3,750
October	126	41	3,760	11	3	52	191	63	4,490
November	111	36	3,390	(4/)	(4/)	26	158	52	4,130
December	133	43	3,610	6	2	67	142	47	4,200
1999:									
January	80	26	2,000	12	4	60	104	34	2,660
February	73	24	2,290	18	6	155	121	40	3,320
March	69	23	2,120	3	1	48	116	38	3,070
April	72	24	2,030	10	3	147	97	32	2,930
January-April	294	97	8,440	43	14	410	438	144	12,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include other countries not listed.

3/ Declared customs valuation.

4/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 4  
U.S. EXPORTS OF SULFUR AND SULFURIC ACID 1/

(Thousand metric tons and thousand dollars)

Period	Sulfur		Sulfuric acid	
	Quantity	Value 2/	Quantity	Value 2/
1998:	898	35,400	155	18,100
January-April	265	12,500	47	4,620
April	84	3,120	15	1,370
May	105	4,390	17	3,400
June	63	2,830	15	1,150
July	155	4,160	17	1,940
August	16	1,310	11	2,140
September	64	2,650	11	1,610
October	104	3,150	14	1,530
November	34	1,440	11	860
December	92	3,020	13	914
1999:				
January	51	2,640	10	802
February	34	2,360	16	1,360
March	41	3,160	11	1,220
April	113	4,760	13	1,860
January-April	239	12,900	50	5,250

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Declared f.a.s. (free alongside ship) valuation.

Source: Bureau of the Census.

TABLE 5  
U.S. CONSUMPTION OF SULFUR 1/

(Thousand metric tons)

Period	Domestic sources 2/	Imports	Consumption
1998:	9,228	2,271	11,499
January-April	3,223 r/	811 r/	4,034 r/
April	736	213	949
May	779	157	936
June	831	199	1,030
July	733	167	900
August	826	182	1,008
September	677	182	859
October	711	181	892
November	733	199	932
December	814	193	1,007
1999:			
January	759	209	968
February	726	267	993
March	766 r/	194	960 r/
April	713	183	896
January-April	2,964	853	3,817

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Calculated as shipments minus exports.

TABLE 6  
RECOVERED SULFUR PRODUCED AND SHIPPED IN THE UNITED STATES,  
BY PAD (PETROLEUM ADMINISTRATION FOR DEFENSE) DISTRICT 1/

(Thousand metric tons)

District and source	May 1999 p/		April 1999		Total 1999 2/		Year to date 1998 2/	
	Production	Shipments	Production	Shipments	Production	Shipments	Production	Shipments
PAD 1:								
Petroleum and coke	21	18	19	19	101	98	101 r/	95 r/
Natural gas	4	4	4	4	18	19	20 r/	20 r/
Total	25	22	23	23	120	117	122 r/	115 r/
PAD 2:								
Petroleum and coke	76	75	66 r/	65 r/	324	320	315 r/	314 r/
Natural gas	3	2	4	5	17	17	23	24
Total	79	77	70 r/	70 r/	341	337	338 r/	338 r/
PAD 3: 3/								
Petroleum and coke	291	279	322 r/	316 r/	1,530	1,530	1,360 r/	1,400 r/
Natural gas 4/	224	229	230	235	1,130	1,080	1,360 r/	1,540 r/
Total 5/	515	508	552 r/	551 r/	2,660	2,610	2,720 r/	2,950 r/
PAD 4 and 5: 6/								
Petroleum and coke	95	97	101 r/	97 r/	503	492	482 r/	478 r/
Natural gas	77	72	94	86	446	446	398 r/	397 r/
California	78	79	92 r/	88 r/	435	422	392 r/	389 r/
Total	172	188	194 r/	183 r/	949	938	880 r/	875 r/
Grand total	791	796	840 r/	826 r/	4,070	4,000	4,060 r/	4,270 r/

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include revisions to prior months.

3/ Includes Puerto Rico and the U.S. Virgin Islands.

4/ Frasch production is included in the natural gas production to avoid disclosing company proprietary data.

5/ Includes data from Frasch producer.

6/ Quantities produced and shipped in California included in petroleum and natural gas. California total shown for information purposes only.

TABLE 7  
COMPARATIVE SULFUR AND SULFURIC ACID STATISTICS 1/

(Million metric tons per year [annualized basis] and dollars per metric ton for period shown)

	1999			1998
	May	April	Year to date	total
Production	9.31 p/	10.20 r/	9.84	9.67
Shipments	9.37 p/	10.00 r/	9.67	10.10
Exports of sulfur	NA	1.37	0.73	0.90
Imports of sulfur:				
Canada	NA	1.58	1.60	1.41
Mexico	NA	0.47	0.52	0.56
Total	NA	2.22	2.59	2.24
Exports of H <sub>2</sub> SO <sub>4</sub>	NA	0.16	0.15	0.16
Imports of H <sub>2</sub> SO <sub>4</sub> :				
Canada	NA	0.88	0.89	1.55
Europe	NA	0.12	0.13	0.05
Total 2/	NA	1.18	1.33	2.04
Consumption: 3/				
Domestic sources	NA	8.67	9.02	9.23
Imports	NA	2.22	2.59	2.24
Total	NA	10.90	11.60	11.50
Sulfur export values 4/	NA	\$42	\$54	\$40
Sulfur import values: 4/				
Canada	NA	\$11	\$9	\$12
Mexico	NA	\$54	\$53	\$48
Average	NA	\$23	\$23	\$27
H <sub>2</sub> SO <sub>4</sub> export values 4/	NA	\$143	\$105	\$117
H <sub>2</sub> SO <sub>4</sub> import values: 4/				
Canada	NA	\$28	\$29	\$31
Europe	NA	\$15	\$10	\$9
Average	NA	\$30	\$27	\$29

p/ Preliminary. r/ Revised. NA Not available.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes other countries not listed.

3/ Because trade data were not available, May consumption was not determined.

4/ Average value per ton for most recent data available.